

## REMARKS

Reconsideration of the present application is respectfully requested. The application, as amended, includes claims 1, 2, 4, 9-11, 20-24, 43, 45-46, 48-50, 101, 103, 104, 106, 147-151, 153, 154, 202-205, 208-213 and 215-247 pending and under consideration. Claims 6-8, 12-19, 25-31, 38-42, 44, 166, 168 and 169 are also pending in the application, and have been withdrawn as directed to non-elected species from further consideration pending final resolution of genus claims.

Applicants acknowledge and thank the Examiner for the indication in the outstanding Action that claims 204 and 215-221 are allowed and that claims 45, 208-211 and 213 would be allowed if rewritten in independent form, including the limitations of their base claims and any intervening claims. Applicants submit that, in view of the following remarks, the base claims to claims 45, 208-211 and 213 are also in condition for allowance.

In addition, Applicants thank the Examiner for the courtesy extended during a telephonic Examiner's Interview on September 10, 2004. In the Examiner's Interview, the undersigned and the Examiner discussed all pending claims, and discussed the outstanding Office Action. In particular, the undersigned attorney argued that it is improper for the Examiner to ignore limitations that are recited in claims, as has apparently been done in this case. The Examiner and the undersigned also discussed alternative claim language that could be utilized to further clarify distinctions between the claimed invention and the art of record. For example, the Examiner's proposal in the Action that Applicants could overcome the art rejections by reciting an "active step" in the claims was discussed, as was the possible use of claim language specifying that the substrate is chosen specifically such that an analytical device is provided when the chemically selective sorbent layer is placed thereon. The Examiner and the undersigned also discussed the possibility of using claim language reciting selection criteria for the first precursor molecule and/or the second precursor

molecule as an affirmative element of the method. On the basis of this interview, Applicants hereby present the above amendments and new claims, and submits that the pending claims, as amended, distinguish the art of record and satisfy all requirements for patentability.

As one final preliminary matter, the outstanding Action states objections to claims 45, 103 and 149 for erroneous words appearing therein. Appropriate corrections have been made to these claims, and Applicants respectfully request withdrawal of these objections.

#### Claim Amendments

Each of independent claims 1, and 48 has been amended to recite: "wherein the substrate and the film together are operable as an analytical device." Each of claims 103 and 149 has been amended to recite: "using the chemically selective sorbent film by exposing the film to a first chemical species that the film will selectively absorb." It is believed that the claims, as amended, are in condition for allowance as discussed further in the remarks below.

In addition, new claims 222-247 have been presented above for entry into this case. Of the new claims, claims 232, 234, 236, 238, 240 and 244 are independent claims.

Each of new claims 232 and 234 recites a method of forming a chemically selective sorbent film that includes as a first step, "selecting a first precursor molecule containing at least two silicon hydride groups and a second precursor molecule containing at least two carbon-carbon multiple bonds based upon a determination that at least one of said first and second precursor molecules has a chemically interactive property that is retained after a chemically selective sorbent film is formed by a hydrosilylation reaction between said first and second precursor molecules and that provides to the film a functionality whereby the film selectively absorbs a first chemical species more than a second chemical species." Applicants submit that these claims are also in condition for allowance for the reasons discussed below.

Each of new claims 236 and 238 recites a method for performing an analytical function that includes “providing an analytical device” made in accordance with various aspects of the invention and “using the device by exposing the film to a first chemical species that the film will selectively absorb.” These claims are also believed to be in condition for allowance.

Each of new claims 240 and 244 recites a method of making an analytical device that includes “selecting a design for an analytical device” in accordance with the invention and “manufacturing an analytical device according to the design” using various processes provided by the present invention. These claims are also believed to be in condition for allowance.

#### Traversal of Art Rejections

In the outstanding Office Action, claims 1, 4, 9-11, 20-24, 43, 46, 103, 106, 147, 148 and 205 are rejected under 35 U.S.C. §102(b) as being anticipated by Cavezzan et al. (4,939,065).

A similar rationale has also been stated in support of a rejection of claims 1, 2, 4, 9-11, 20-24, 43, 46 and 205 in the outstanding Office Action under 35 U.S.C. §102(b), as being anticipated by Oxman et al.

Applicants submit that the Examiner has improperly ignored express language recited in the subject claims, and has refused to give patentable weight to express language in the claims that distinguish the claimed invention from the cited references. As such, Applicants submit that the rationale provided in the outstanding Action for the rejections under §102(b) are flawed. Nevertheless, in order to facilitate the allowance of the present application and issuance of a patent on this application, Applicants have above requested entry of amendments and new claims that include language further clarifying distinctions between the claimed invention and the cited art.

For example, each of independent claims 1, and 48 has been amended to recite: “wherein the substrate and the film together are operable as an analytical device.” Applicants submit that these claims, as amended, are not anticipated by Cavezzan et al. or Oxman et al. because neither of the Cavezzan et al. or Oxman et al. disclosures describes any method or device in which the substrate and the film together are operable as an analytical device.

Cavezzan discloses a fabrication process for making “microelectronic” devices; the processes including the placement of a negative resist layer over a device being processed. A person of ordinary skill in the art will recognize that negative resist processing involves the placement of a rugged, inert resist barrier over a device so that the underlying layers can be etched away, typically by contacting the underlying layers (and the resist barrier) with chemicals or other processing conditions. After etching, the resist barrier is removed prior to further processing steps. It is thus apparent to a person of ordinary skill in the art that resist layers such as those described in Cavezzan do not become functional components of the device being fabricated, but rather serve a transient purpose as a barrier during fabrication and are then discarded.

Oxman discloses a process for the “actinic radiation-activated addition reaction of a compound” and states that: “An important application of the process and compositions of the invention is as a visible light curable impression material for dental applications.” The stated advantages of the compositions and process in Oxman are: (1) the reaction composition will not react prematurely, (2) because heat is not required, the reaction can be carried out on the surface of heat-sensitive substrate without adversely affecting the substrate, (3) actinic radiation curing requires less energy than does thermal curing, (4) greater safety attributed to visible radiation than ultraviolet radiation, (5) the composition allows the cure of unusually thick sections of material, and (6) low levels of catalyst can be used.

It is believed that there is no mention made in Oxman of any analytical functionality of the cured material. Indeed, in view of the stated use of the composition described in Oxman as an impression material for dental applications, it is apparent that the composition described therein is inert under conditions in which it is intended to be used. It is also apparent to a person of ordinary skill in the art that materials such as those described in Oxman do not become functional components of an analytical device, but rather serve a rugged structural function as a dental appliance. Indeed, there is no indication in Oxman et al. that the authors placed any importance upon sorbent functionality or chemical selectivity as characteristics of the resulting compositions described therein.

The Action asserts that the polymeric material described in Cavezzan and Oxman is similar to the material described and claimed in the present application, and that it must therefore have the same inherent properties and function. It is important to understand, however, that the claims of the present application do not merely recite compositions of matter. Rather, the claims, as amended, recited placement of a chemically selective sorbent film on a substrate, “wherein the substrate and the film together are operable as an analytical device.” As described in the present specification, for an analytical device of the invention to be operable, two important features need to exist, namely, it needs to include: (1) a chemically selective sorbent film that has an affinity to one or more select chemical species, and (2) a substrate configured to detect the presence of the chemical species in the film, for example, by detecting a physical change in the film when the chemical species is present. Because the cited references do not teach or suggest any such analytical device or any such functionality, Applicants submit that the references cannot be found to anticipate these claims.

There is no mention of any substrate/polymer combination in either of the cited references that has any special function, much less that functions as an analytical device as recited in claims 1 and 48, as amended. As such, neither Cavezzan et al. nor Oxman et al. can be found to anticipate these claims, at least because no functional analytical device is disclosed in either of these references.

In the outstanding Action, the Examiner states that:

The recitation '*for subsequent use to selectively absorb a first chemical species to which the film is exposed;*', has not been given patentable weight because the recitation merely recites the purpose of a process or the intended use of a structure. However, if applicants change the recitation '*for subsequent use to selectively absorb a first chemical species to which the film is exposed;*' such that it includes an active step instead of an intended use, present rejections will be overcome over Cavezzan...[and]...over Oxman. (emphasis in original).

Applicants have above requested entry of amendments to claims 103 and 149 in a manner that is consistent with the Examiner's suggestion stated in the above quotation, and the subsequent discussion with the Examiner in the above-discussed telephonic Examiner's Interview. In this regard, each of these claims, as amended, recites, "using the chemically selective sorbent film by exposing the film to a first chemical species that the film will selectively absorb." Applicants submit that these claims, as amended, are not anticipated by the Cavezzan or the Oxman reference at least because neither of these references discloses a use of any film as recited above.

Withdrawal of the rejection of these claims under §102(b) is therefore respectfully requested.

A number of claims are also rejected in the outstanding Action under 35 U.S.C. §103(a) as being unpatentable over various combinations of the Cavezzan and Oxman references with secondary references (Sachdev et al. and Murai et al.). Each of the combinations uses the Cavezzan and/or the Oxman reference as the primary reference. In reply to each of these rejections, Applicants submit that the above-discussed features of the claimed invention distinguish

the claimed invention from all of the asserted combinations of references as well because none of the cited references teaches or suggests the invention recited in the above-discussed claims, as amended. In particular, none of the cited references teaches or suggests a method in which “the substrate and the film together are operable as an analytical device.” In addition, none of the cited references teaches or suggests a method that includes, “using the chemically selective sorbent film by exposing the film to a first chemical species that the film will selectively absorb.” As such, Applicants respectfully request withdrawal of the rejections stated in the Action under 35 U.S.C. §103(a).

Claims 2, 4, 6-31, 38-45 49-50, 104, 106, 150-151, 153-154, 166 and 168-169 depend, directly or indirectly from the independent claims discussed above. In addition to other reasons, these dependent claims are believed to be in condition for allowance for at least the same reasons as the independent claims from which they depend. In this regard, claims 2, 4, 6-31 and 38-45 depend from claim 1, and are believed to be allowable at least for the reasons claim 1 is allowable and for other reasons. Claims 49 and 50 depend from claim 48, and are believed to be allowable at least for the reasons claim 48 is allowable and for other reasons. Claims 104 and 106 depend from claim 103, and are believed to be allowable at least for the reasons claim 103 is allowable and for other reasons. Claims 150, 151, 153, 154, 166, 168, and 169 depend from claim 149, and are believed to be allowable at least for the reasons claim 149 is allowable and for other reasons. Although the above discussion is based primarily upon features recited in independent claims, dependent claims pending in this application define additional features of various embodiments of the invention, and are patentable for additional reasons as well.

Applicants would also draw the Examiner's attention to new claims 222-247 presented herein. These claims are also believed to define patentable subject matter that is novel and non-obvious over the references of record. Applicants therefore respectfully request an indication that these claims are in condition for allowance.

Claims 222-231 are dependent claims, each of which depends from claims 1, 48, 103 or 149. Applicants submit that these new dependent claims are in condition for allowance for at least the same reasons as the independent claims from which they depend, and for additional reasons.

Each of new independent claims 232 and 234 recites a method of forming a chemically selective sorbent film that includes as a first step, "selecting a first precursor molecule containing at least two silicon hydride groups and a second precursor molecule containing at least two carbon-carbon multiple bonds based upon a determination that at least one of said first and second precursor molecules has a chemically interactive property that is retained after a chemically selective sorbent film is formed by a hydrosilylation reaction between said first and second precursor molecules and that provides to the film a functionality whereby the film selectively absorbs a first chemical species more than a second chemical species."

Applicants submit that it is improper to ignore the "selecting" element recited in the subject claims as the Examiner did in the outstanding Action. In support of a claim rejection, it is stated in the Action that:

[T]he recitation 'wherein at least one of the first and second precursor molecule is selected *based upon its having a chemically interactive property that is retained after the hydrosilylation reactions, and that provides to the chemically selective solvent [sic] film a functionality whereby the film selectively absorbs the first chemical species more than a second chemical species*' has not been given patentable weight because it merely recites a *reason for choosing* the present first and second precursor molecules... [I]t should not matter (for the purpose of



determining patentability) whether those compounds are being chosen by Cavezzan for the same reason or not...[I]t is the Examiner's position that those compounds were *inherently* selected for the same reason as recited in present claims 1 and 103. (Office Action, pages 5-6).

Applicants submit that this rationale is flawed and that it is improper for the Examiner to ignore portions of the subject claims as she has done. There is no legal authority provided in the Action for ignoring this express language in the claims. The "selecting" has now been recited as an express element in claims 232 and 234, and Applicants submit that this element must be given patentable weight.

Applicants submit that the selecting element recited above was not disclosed in any of the cited references, or any other reference of record, and that a person of ordinary skill in the art would not have been motivated by any reference of record to select the first precursor molecule and the second precursor molecule as recited in these claims. Applicants also submit that this element cannot be ignored by the Patent Office in determining patentability.

Neither the Cavezzan reference nor the Oxman reference discloses selection of precursor molecules based upon any chemically interactive properties that provide selective sorbent functionality to the resulting film. Indeed, there is no indication in Cavezzan or Oxman that the authors placed any importance upon sorbent functionality or chemical selectivity as characteristics of the resist films described therein. As such, these references cannot be found to anticipate a claim that recites selecting a precursor molecule based upon such functionality. Furthermore, the method described in Cavezzan et al. uses an inhibitor material as part of his photoactivated catalyst that is contrary to the desired chemical selectivity of the film. The inhibitor described therein is a highly polar material that will influence and interfere with the chemical selectivity of the final

material. Applicants therefore submit that Cavezzan et al. teaches away from the presently claimed invention, which includes the selection of precursors based upon such selectivity.

Each of new claims 236 and 238 recites a method for performing an analytical function that includes “providing an analytical device” made in accordance with various aspects of the invention and “using the device by exposing the film to a first chemical species that the film will selectively absorb.” Because neither Cavezzan nor Oxman, nor any other reference of record describes a method involving the use of a chemically selective sorbent film in an analytical device, Applicants submit that these claims are also in condition for allowance. Action to that end is respectfully requested.

Each of new claims 240 and 244 recites a method of making an analytical device that includes “selecting a design for an analytical device” in accordance with the invention and “manufacturing an analytical device according to the design” using various processes provided by the present invention. Because neither Cavezzan nor Oxman, nor any other reference of record describes a method involving the use of a chemically selective sorbent film in an analytical device, Applicants submit that these claims are also in condition for allowance. Action to that end is respectfully requested.

Claims 233, 235, 237, 239, 241-243 and 245-247 depend, directly or indirectly from the new independent claims discussed above. In addition to other reasons, these dependent claims are believed to be in condition for allowance for at least the same reasons as the independent claims from which they depend.

## CLOSING

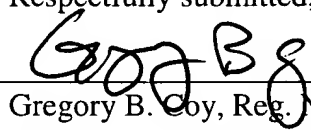
In view of the above, Applicants respectfully submit that the present application, as amended and including pending claims 1, 2, 4, 6-31, 38-46, 48-50, 101, 103, 104, 106, 147-151, 153, 154, 166, 168, 169 202-205, 208-213, and 215-247, is in condition for allowance. Action to that end is respectfully requested.

Applicants also respectfully submit that, upon allowance of the claims currently pending and under consideration, it is appropriate for the Examiner to reinstate and allow the claims that were previously withdrawn from consideration as drawn to non-elected species (i.e., claims 6-8, 12-19, 25-31, 38-42, 44, 166, 168 and 169).

If there are any remaining issues that can be addressed telephonically, the Examiner is invited to contact the undersigned to discuss the same.

Respectfully submitted,

By



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